

Abstract

A monolithically integrated optic triplexer is described herein that can be mounted in one transistor outline (TO) can and can be used in a passive optical network. The monolithically integrated optic triplexer includes: (1) an emitting laser that is capable of transmitting a 1310 \pm 10nm optical signal; (2) a first photodiode that is capable of receiving a 1490 \pm 5nm optical signal; and (3) a second photodiode that is capable of receiving a 1550 \pm 5nm optical signal. In one embodiment, the emitting laser is placed on top of the two photodiodes which are monolithically integrated on a substrate. And in another embodiment, the emitting laser and two photodiodes are all monolithically integrated on a substrate. The monolithically integrated optic triplexer may also include a thin film filter that is located between the emitting laser and the first photodiode. In addition, the monolithically integrated optic triplexer may include a thin film filter that is located between the first photodiode and the second photodiode. Also described herein is a method for making the monolithically integrated optic triplexer.